

The background image shows a fighter jet, likely an F-35, on the deck of an aircraft carrier. Two crew members in red flight suits and helmets are in the foreground, facing away from the camera towards the jet. The scene is filled with a thick mist or smoke, creating a dramatic atmosphere. The jet's canopy and wings are visible through the haze.

AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT (ALRE) CARRIER ATRB

**S. L. Miller, CAPT, USN
ALRE Program Manager
PMA 251**

**Chris Matthews
ALRE Class Desk
AIR 4.8.1 / PMA 251T**

Outline



- **PMA 251 Program Summary**
- **US Navy Focus for Programs**
- **Products Supported**
- **ALRE Technology Needs**

Program Summary

SERVICES / LCS



Aircraft Launch & Recovery Equipment

Carrier ATRB - 9 June 2004

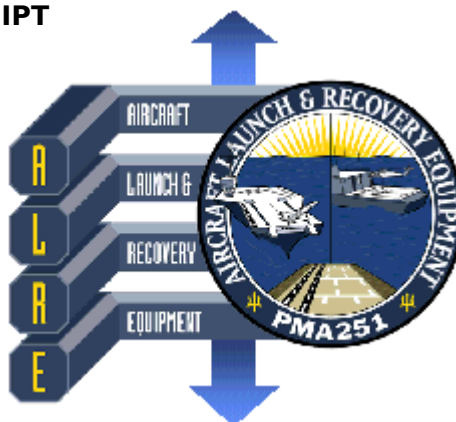
SERVICES

FLEET PROGRAMS

- ALRE Maintenance Program (OPNAVINST 4790.15)
- Shipboard/Shorebased Aircraft Firefighting NATOPS
- Provide "on call" Fleet/Field ALRE Depot Level Repair and Rework capability through the NADEP Voyage Repair IPT

SHIP INTEGRATION

- Integration of Aviation Systems on Ships
- HOSTAC Program
- Aviation Facilities Certification
- Aviation GFE Monitoring



LIFE CYCLE SUPPORT

SHIP

- Launch & Recovery
- Visual Landing Aids
- Wind Measuring
- Aircraft Fire Fighting Vehicle
- C4I, Integrated Shipboard Information Systems

SHORE

- Recovery
- Visual Landing Aids
- Test Catapults

USMC

- Expeditionary Airfield Matting
- Recovery
- Visual Landing Aids
- Airfield Lighting

US Navy Focus



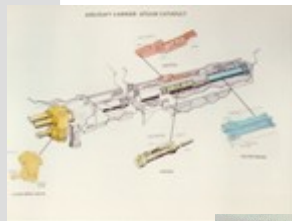
- “All Electric” Ship Navy
 - Limit use of systems requiring Steam and Hydraulics
- Reduce Navy Manpower
 - Move towards Condition Based Maintenance
 - Implement Automation
- Improve Fleet Readiness
 - Fleet Response Plan (FRP)
 - Improve Availability
- Improve System Interoperability
 - Open Architecture
 - Utilize Shared/Common Infrastructure
- In Addition... PEO Carriers Focus
 - Return Ship Service Life Margins
 - Reduce Topside Weight & KG
 - Reduce Loads on “Hotel Service”
 - Improve Sortie Generation Rate (CVN 21)

In-Service

New Acquisition

Launcher Systems

- Catapults
 - C7
 - C13-1
 - C13-2
- Jet Blast Deflector
- Integrated Catapult Control Station
 - CVN 68 Class
 - CVN 76 Class



C13



ICCS

JBD



Electro Magnetic Aircraft Launching System (EMALS)



Recovery Systems

- Ship Arresting Gear
 - MK7 MOD3
 - MK7 MOD4
- Ship Barricade
- Shore Emergency A/G
 - E-28
- Expeditionary A/G
 - M 21
 - M 31



MK 7 MOD3/4



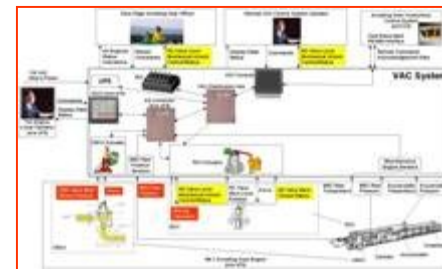
M 31



Barricade



Advanced Arresting Gear (AAG)



Aircraft Recovery Control System (ARC)

Cross-Check System

In-Service

New Acquisition

Visual Landing Aids & Ass. Eq.

- Improved Fresnel Lens Optical Landing System (IFLOLS)
- Long Range Line-Up System (LRLS)
- Deck Lighting & Controls
- Integrated Launch & Recovery Television Surveillance (ILARTS)
- LSO HUD
- Wind Measurement & Instrumentation System (WMIS)
- Lens / Gear Cross Check



IFLOLS



LRLS



LSO HUD



Cross Check System



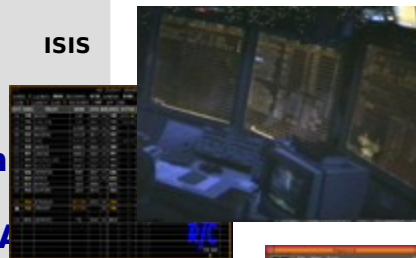
I-HUD



Moriah Wind System

Ship Aviation Data Mgt Aviation Data Management and Control System (ADMACS)

- Integrated Shipboard Information System (ISIS)
- Magazine Arrangement Planning & Computerized (MAPA-C)
- Aviation Weapons Information System (AWIMS)
- Operations Planning Information System (OPIS)



ISIS

MAPA-C



ADMACS Bk 1 & 2



Technology Needs



Aircraft Launch & Recovery Equipment

Carrier ATRB - 9 June 2004

- **Launcher System**
 - High Density Energy Storage (EMALS)
 - Advanced Thermal Management (EMALS)
 - Hi-Rel / Efficient Cabling and Connectors
 - Zero Manning on Deck
- **Recovery System**
 - Energy Absorber - Variable Viscosity (Rheologic) Fluids
 - Wireless Arrestment
 - Advanced Sheave Material
 - Electric Actuators
- **Visual Landing Aids**
 - Advanced Lighting Technologies
 - Next Generation Optical Landing Aids (holographic,...)
- **ALRE Shipboard Information Management**
 - System Prognostics for Condition Based Maintenance
 - Decision Aids / Intelligent Agents for Knowledgebased ALRE / Air Operations Management.
 - Automated Data Inputs (aircraft, weapons, etc.)